Instructions:

1. Complete one form per course.
2. Attach this Foundational Studies Course Application Form to the back of the University Curriculum Committee “Request for Curriculum Action” form. Both forms should be submitted to the Foundational Studies Program Office by August 19, 2011.

Part I. Course Information:

Course Number and Title: MATH 160 Survey of Calculus

Type of Foundational Studies Course – (Choose One):

[ ] DLS (Disciplinary Lens – Social Science)
[ ] DLL (Disciplinary Lens – Literature and Humanities)
[ ] DLV (Disciplinary Lens – Visual and Performing Arts)
[x] DLM (Disciplinary Lens – Mathematics)
[ ] DLN (Disciplinary Lens – Natural, Physical, and Applied Sciences)

Includes Lab: [ ] Yes [ ] No
[ ] CID (Communication in the Discipline)
[ ] FF (Finishing Foundations)

Delivery Format(s) – (Check all that apply):

[x] Face to Face
[ ] Fully Online
[ ] Hybrid
[ ] Concurrent Enrollment
[ ] Other (briefly describe):
Part II. Syllabus Statement:

In the space below, include the syllabus statement for this course which will appear on the first page of the syllabus for each section of this course. (Template and examples are appended to this application form.)

Boise State’s Foundational Studies Program provides undergraduates with a broad-based education that spans the entire university experience. Math 160: Survey of Calculus satisfies four units of the Foundational Studies Program’s Disciplinary Lens-Mathematics (DL-M) requirement. It supports the following University Learning Outcome (ULO #7), along with a variety of other course-specific goals.

• Apply knowledge and the methods of reasoning characteristic of mathematics, statistics, and other formal systems to solve complex problems.

Math 160: Survey of Calculus is designed to introduce and use the fundamental concepts of calculus, namely limits, derivatives, and integrals. This course helps to achieve the goals of the Foundational Studies program by focusing on the following course learning outcomes. After successful completion of this course, you will be able to:

• Evaluate limits, derivatives, and integrals in graphical, algebraic, exact, or approximate ways, for functions at a level commensurate with this course or its prerequisite(s).
• Use such evaluation processes to solve various applied problems, primarily in the areas of business, economics, life sciences, or social sciences.
• Graphically show the results obtained from evaluation and solution processes.
• Provide well-written evaluation and solution processes with correct mathematical notation.
• Provide written interpretations of the results obtained from evaluation and solution processes.
• Construct and carry out valid solution processes for applied problems.

Part III. Design for Accessibility:

In the space below, briefly describe plans for providing access to course materials and activities (or equivalent alternatives) to all students in adherence with the Americans with Disabilities Act. Although these plans may vary from instructor to instructor, the descriptions provided below should be representative of intended departmental and instructor practices. (See example statements appended to this form.)

Math 160: Survey of Calculus: Any student who may need accommodations based on the effect(s) of a disability should contact the Disability Resource Center (Room 114 in the Administration Building, or 208-426-1583) to meet with a specialist and coordinate reasonable accommodations.

Part IV. Evidence of Quality Course Design:

Please use the table below (column headings for this table should not be changed) to provide evidence that the course has been carefully designed and is clearly aligned with Foundational Studies Program desired ULOs. All sections of the course should share similar student learning outcomes. Teaching and Learning Activities and Assessment Methods may vary from instructor to instructor.
Please use the table to report representative strategies that may be used. Assessment activities used for reporting to the Foundational Studies Program should be consistent across different sections of the course.

Please see below.

Part V. Additional Justification (Optional):

If the brief justification provided to the University Curriculum Committee in the proposal to accompany the “Request for Curriculum Action” is not sufficient to make the case for including the course in the Foundational Studies Program, additional (optional) narrative can be added here.

Review Committee Checklist:

_X___ Syllabus Statement - statement introduces the student to the purpose and role of the course in the Foundational Studies Program curriculum.

_X___ An appropriate number of Course Learning Outcomes are specified for the course and are clearly designed to support the Foundational Studies Program ULOs.

_X___ Course Learning Outcomes are appropriately designed for level of the course and address both content mastery and skill-based outcomes.

_X___ The types and numbers of assessments planned for the course are appropriate for measuring the content or skills being assessed

_X___ Course learning activities are likely to promote the achievement of the stated outcomes

_X___ Course design and materials have considered best practices for accessibility to course materials and ideas by all students (e.g., alternatives to auditory and visual content)

Feedback from Review Committee:

Overall the proposal is well done. We recommend this proposal be accepted with the following change:

1) Developer needs to individualize the activities for each ULO to allow for insight into how the activities/pedagogy link to the anticipated outcomes.

The committee thinks that having an “emphasis on graphical and written presentation and interpretation” will require further definition and guidance for the instructors teaching the course.

Feedback from Foundational Studies Program:

Please address the committee’s requested revisions. I share a concern about the linkage between ULOs, course outcomes and the activities in the class outcomes. Please revise and return. I recommend viewing MATH 257 or Math 123 as a model of the way the committee would like to see these learning outcomes addressed more explicitly.

Additionally, please transfer this proposal onto the course approval form.

Please note certification below. All concerns raised by the committee have been addressed.

VS

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Electronically signed by Vicki Stock, Director, Foundational Studies Program, Boise State University

CERTIFIED FOR APPROVAL 10-10-2011.

<table>
<thead>
<tr>
<th>Foundational Studies Program Director Signature</th>
<th>Date</th>
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</table>
Boise State University
Foundational Studies Course

Course Number and Title: Math 160 Survey of Calculus

Course Design Table

<table>
<thead>
<tr>
<th>Foundation ULO 7 Criteria</th>
<th>Foundation ULO 7 Notions of Exemplary Work</th>
<th>Course Learning Outcomes: By the end of this course, each student should be able to…</th>
<th>Assessment Method: Evidence of Student Learning</th>
<th>Planned Teaching &amp; Learning Activities / Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ULO 7: Application of quantitative reasoning methods</td>
<td>• Apply quantitative reasoning methods (regardless of context) to draw appropriate conclusions</td>
<td>• Evaluate limits, derivatives, and integrals in graphical, algebraic, exact, or approximate ways, for functions at a level commensurate with this course or its prerequisite(s). • Use such evaluation processes to solve various applied problems, primarily in the areas of business, economics, life sciences, or social sciences.</td>
<td>• Approximately weekly homework assignments or quizzes. • Several exams (two to three, or approximately monthly). • A comprehensive final exam. • Review of the above regarding correct results and usage.</td>
<td>• Lectures and examples. • Possible use of in-class problems via student group work, short result presentations, or discussions. • Student engagement and practice via readings, homework, and above classroom activities.</td>
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<tr>
<td>ULO 7: Communication of mathematical ideas through multiple representations</td>
<td>• Interpret and communicate (orally and visually) mathematical problem elements</td>
<td>• Graphically show the results obtained from evaluation and solution processes. • Provide well-written evaluation and solution processes with correct mathematical notation. • Provide written interpretations of the results obtained from evaluation and solution processes.</td>
<td>• Instruments as above reviewed for clarity and correctness of graphical and written presentation and interpretation.</td>
<td>• Lectures and examples. • Possible use of in-class problems via student group work, short result presentations, or discussions. • Student engagement and practice via readings, homework, and above classroom activities.</td>
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<td>ULO 7: Recognizing and solving problems</td>
<td>• Apply the appropriate strategy when solving mathematical problems</td>
<td>• Construct and carry out valid solution processes for applied problems.</td>
<td>• Instruments as above reviewed for clarity and correctness of both construction and application.</td>
<td>• Lectures and examples. • Possible use of in-class problems via student group work, short result presentations, or discussions. • Student engagement and practice via readings, homework, and above classroom activities.</td>
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<tr>
<td>ULO 7: Mathematical skill and insights</td>
<td>• Analyze a problem type and apply the appropriate technique in new situations.</td>
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<td>ULO 7: Articulating role of technology in mathematics</td>
<td>• Select and apply appropriate technological tools and interpret the results.</td>
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